

# **Abstract**

An optical network hub structure comprising a WDM unit arranged in line with a fibre trunk carrying a bi-directional optical network signal to drop/add blocks of wavelengths destined to/originating from the network hub structure and to through connect other blocks of wavelengths, and at least one amplifier structure disposed in line on the fibre trunk at each side of the WDM unit, each amplifier structure comprising at least two propagation dependent optical junction elements, at least two optical paths optically connected in parallel between the two junction elements, and a first amplifier in only one of the optical paths, whereby a bi-directional, multiplexed optical signal comprising different blocks of wavelengths, each block of wavelengths having a specified propagation direction with respect to the amplifier structure, is, in use, uni-directionally amplified, whereby at each side of the WDM unit the optical network signal is, in use, uni-directionally amplified.

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